MARINE REVIEW.

VOL. XV. CLEVELAND, O., MARCH 11, 1897. No. 11.

Carnegie Company's Special Ore Facilities.

Although the Carnegie Steel Co. will probably not be able to take advantage in any way of the big dock and railway improvements now under way at Conneaut until the first of August, or probably a little later, on account of changes in plans, the force of these special arrangements for handling Carnegie ore will be felt by other interests before the coming season of navigation is at an end. The new slip on which modern dock machinery is to be erected at Conneaut will be 1,500 feet long and 165 feet wide, and will have, in addition to a car dumping machine for loading coal, such facilities as will admit of the unloading of 10,000 gross tons of ore per day, most of which will go directly into cars. The plans are arranged for unloadng at this new plant two of the Rockefeller ships each day, and it is expected that the cargoes of these vessels with deeper water in lake channels will even exceed 5,000 gross tons each. On one side of the slip will be located the car dumping machine and an ore plant of twelve rigs, the latter arranged for direct loading into cars. On the other side the plant will also be of the twelve-rig kind, but will have storage facilities. The question of introducing electrical power for the operation of the ore unloading machinery has been under consideration. Contracts have not as yet been let for any of the machinery, but proposals will soon be passed upon, and there is little doubt anyhow of this part of the work being in readiness in advance of the railway improvements. Steel hopper-bottom ore and coal cars will be used on the railway and they will have a capacity of fifty tons each. About 200 of these will be built on a first, order for which specifications have already been issued. The cars will probably cost about $700 each, and orders increasing the number to about 700 cars will be given out later on, so that the total expenditure on this item alone will be about $500,000. The new locomotives will be of a very heavy type, capable of hauling twenty to thirty of the big steel cars loaded.

Last of the Customs Fees.

The government has been gradually removing the fees charged to vessels and officers of vessels by collectors of customs until finally the last item of this kind has been wiped out. An act of the last congress, approved on March 3, and which goes into effect on the first of next July, provides "that fees for the entry direct from a foreign port and for the clearance direct to a foreign port of a vessel navigating the waters of the northern, northeastern and northwestern frontiers of the United States otherwise than by sea, prescribed by section 4382 of the revised statutes, are abolished. Where such fees, under existing laws, constitute in whole or in part the compensation of a collector of customs, such officer shall hereafter receive a fixed sum for each year equal to the amount which he would have been entitled to receive as fees for such services during said year."

The fee here referred to is 50 cents, and it has been charged for a great number of years past, in each case of arrival or clearance, to all vessels on the lakes trading to Canadian ports. After July 1 the only charge will be that of 10 cents made by the collector for the blank on which the arrival or clearance is written.

Mr. J. C. Ricketson of Milwaukee, who has resigned the management of the Inter-Ocean Transportation Co.'s fleet of vessels, has the best wishes of a very large circle of acquaintances in all parts of the lakes. He is a gentleman in the best meaning of the term among Americans, and during his many years of service with the largest of the Milwaukee transportation companies, he has always been held in the highest regard by everybody who had any business with him. He was actively interested in the affairs of the Lake Carriers' Association and will be missed at the meetings of that organization. The management of the Inter-Ocean company's vessels has been entrusted to David Vance & Co. It is understood that Mr. Ricketson has been in poor health and will take a rest for a time, intending later on to devote his attention to the Ricketson Mineral Paint Co., of which he is the head.

Low Lake Freights—Iron Ore Matters.

With a view to assisting ore dealers in making sales for 1897 at the best possible prices, Cleveland vessel owners have talked of an 80-cent lake freight from the head of Lake Superior, and some of them have hoped that there would be sufficient improvement in the iron market during the present month to warrant the payment of that rate on season contracts. But now that the opening of navigation is not far off, it must be admitted, in fairness to vessel owners who are not in close touch with the Cleveland market, that the best rates talked of among ore dealers are 70 cents to Oct. 1, and possibly 75 cents for the full season. In most cases the 70-cent rate is spoken of for the full season. This is not an encouraging outlook, and it can be said truthfully that there are many owners of vessels of the largest class who will take chances on the going rates during the season in preference to tying up to 70-cent contracts, as the general opinion, both among ore dealers and vessel owners, is to the effect that business conditions must improve during the spring and summer and that the best freights will be paid during the latter half of the year. It is admitted also that there can be little profit for even the largest steel vessels in such rates, but the ore dealers claim that whether they pool their interests or not, they must sell ore at prices fully $1 a ton lower than those of a year ago. Among other arguments which they advance in support of low freights is the claim that the grain movement will be very limited early in the season, as compared with 1896, and that 70 cents with deeper water from Lake Superior is almost equal to 80 cents at a draft of 14½ feet. It is admitted on both sides that it will be to the best interests of everybody concerned if vessel owners will delay fitting out and put off a general movement of vessels as long as it is possible to do so.

Developments of the past few days among leading interests in the ore business give assurance of a continuance of the ore pool, taking in all of the mining companies. The general meeting arranged for Monday last was postponed for another week, in order to arrange more definitely the agreements between the big Mesabi companies, and it is now confidently expected that the whole matter will be closed up early next week, but some time will be required in fixing the different prices and making up the apportionment, so that probably three weeks will elapse before any ore is offered for sale.

Failure of the Appropriation Bills.

River and harbor appropriations for the lakes amounting to several millions, an appropriation of $25,000 for gas buoys, $200,000 for completing two new revenue cutters and various other items of great importance to lake interests were all lost in the closing hours of the last congress by the the refusal of the outgoing president to sign several appropriation bills, the most important of which from a lake standpoint was the sundry civil bill. The last issue of the Review, which went to press just before the Democratic administraton stepped out, contained an article congratulating lake representatives in congress upon their success in obtaining liberal appropriations from both houses, but the final act of the administration overturned everything for which the representatives and the executive officers of the Lake Carriers' Association had been working for a long time past. It is expected that these bills will be passed at the extra session of the new congress, but a delay of two months or more must occur at the best, and it is doubtful whether any of the appropriations will now be available for use during the coming season.

Capt. Daniel McLeod of Cleveland is no longer connected with the publication of the Inland Lloyds Vessel Register. A revision of the register for 1897 is being made at Buffalo with the least possible expense, by Captains George McLeod, Cyrus Sinclair, John Perew and other representatives of the Chicago and Buffalo agents who have published it for a great many years past. It is understood that the new book will contain no valuations in cases where vessels are above $50,000 in value.

Rochester & Pittsburgh Company's Docks.

A view of the Rochester & Pittsburg Coal & Iron Co.'s docks on the Blackwell canal, Buffalo, is presented on this page. This company has the handling of iron ore that goes to the new furnace of Rogers, Brown & Co. at Punxsutawney, where the coke ovens of the Buffalo, Rochester & Pittsburg Railroad Co. are situated. About 30,000 tons of iron ore was forwarded over these docks last season, but this is only a begining, as it is claimed that these shipments will be more than doubled during the coming summer with a large increase also in other business. McMyler rotary hoists now on the docks are to be assisted by new hositing and conveying machinery of the Brown kind, especially suited for handling ore, and the docks are to be otherwise improved. A fuel scow, which appears in the picture, shows that the company is equipped for rapid fueling of vessels. The intention of the management is to provide facilities equal to the best of the ore and coal docks at Ohio ports.

Bad Spots in the Rivers.

A vessel captain who seems to realize the advantages of the various aids to navigation that have been established in the connecting channels of the lakes writes from Erie to Capt. Geo. P. McKay about places where lights are still needed, but he neglected to sign his name. He says:

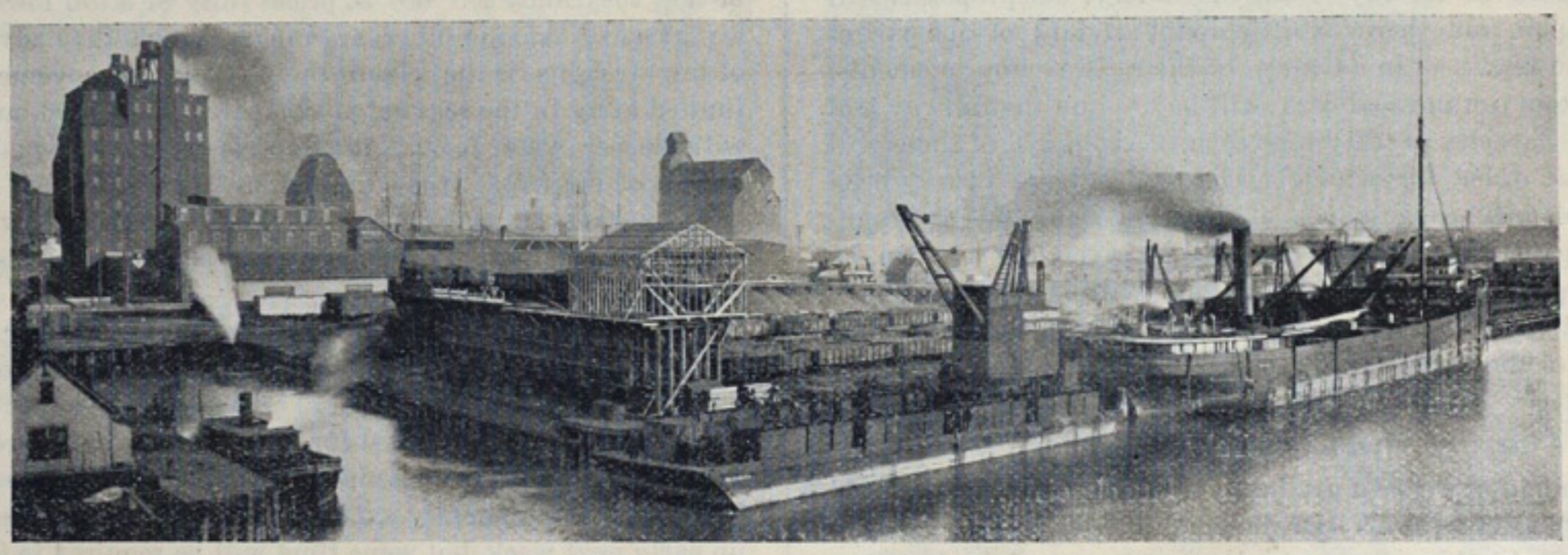
"Realizing and appreciating the vast amount of valuable aid you have rendered marine interests in general, and to those in charge of steamers in particular, I would like to call your attention to two or three bad points that could be greatly improved at no very great expense. You have, no doubt, considered them yourself, but I would like to have you know that others have their minds on them, especially on dark nights when we are in the rivers. The most important of these would be a small float with lights on it, located at the shoal at the foot of Stag island, near the stake. You know it is a long, dark run going up there on bad nights, and I have found the place quite deceiving more than once, and while I never had the misfortune to get a boat aground there, I have seen several others who were not so fortunate. It is a bad spot and a light would improve it. I should think the keeper of the range lights on the Canadian shore at Stag island could take care of such float; so surely there would be no great outlay of money. The second spot is the point just below Courtwright. A light at that point, or a float light near the lower stake on the middle-ground off St. Clair, would be a big help in making that bend on dark nights, and, of course, you know that steamboats must run up the river on dark nights just as they do in favorable weather. The third spot where a new light would be an aid to steamboat men is the shoal at the head of Russell's island. The ranges there are, of course, a great help, especially to boats bound down, but a light at the head of the shoal, or near the stake, would help matters much more; and then, it is well to know just when one is clear of that shoal, so that more room can be given to those who are inclined to crowd, as this has of late been a favorite crowding spot. The last and least of these suggestions which I have in mind, would be to have more light on the float (which, by the way, is a great benefit), that is located on the shoal or middle-ground opposite the elevator at Sarnia. Once or twice last season the writer found the light had gone out. On another occasion he mistook it for a reporter's boat and nearly came to grief on the docks at Sarnia. The night was quite dark and a light fog was on the water, shutting out the docks and making the float light very deceiving. Two or more lights on this float would distinguish it from any small craft and would help make this a point of safety."

Stocks of Grain at Lake Ports.

The following table, prepared from reports of the Chicago board of trade, shows the stocks of wheat and corn in store in regular elevators at the principal points of accumulation on the lakes, Mar. 6, 1897:

	Wheat, bushels.	Corn, bushels.
Chicago	11,141,000	7,797,000
Duluth	4,769,000	43,000
Milwaukee	265,000	5,000
Detroit	312,000	95,000
Toledo	984,000	1,874,000
Buffalo	1,215,000	112,000
	18,686,000	9,926,000

As compared with a week ago, the above figures show, at the several points named, an increase of 229,000 bushels of wheat and 760,000 bushels of corn. Grain afloat at Chicago Mar. 6—Wheat 200,000 bushels, corn 3,346,000 bushels, oats 615,000 bushels, rye 194,000 bushels, barley 97,000 bushels; at Buffalo, wheat 240,000 bushels, corn 225,000 bushels, oats 81,000 bushels, rye 95,000 bushels; at Duluth, wheat 402,000 bushels.



DOCKS OF ROCHESTER & PITTSBURG COAL & IRON CO., BUFFALO.

Col. G. L. Gillespie, government engineer in charge of New York harbor improvements, seems to favor the plan of the government building dredges for work in the harbor. He recently submitted a report that will interest dredging contractors. The report has reference to deepening the main ship channel from the Narrows to the sea to get 35 feet at mean low water. To obtain a channel 1,000 feet wide and 35 feet deep, it will be necessary to remove 12,000,000 cubic yards of material, at an estimated cost of $1,740,000. This includes building four dredges at $100,000 each. These dredges could complete the work in four years. Should a channel of 1,500 feet wide and 35 feet deep be made, 26,660,000 cubic yards of matter would have to be dredged at an estimated cost of $2,772,000. This includes building five dredges at $100,000 each. If a channel 2,000 feet wide and the same depth should be made it is estimated that it would cost $4,180,000, including the cost of six dredges. These figures are based upon the net cost of the dredging heretofore done in the harbor by the United States dredge. It is claimed that should the work be done by contract, these figures should be increased 20 per cent.

A chart of the whole of Georgian bay, the best thing of its kind as yet published, has recently been issued by the British admiralty, and may be had from the Marine Review, No. 409 Perry-Payne building. Another chart, of a very clear and interesting kind, taking in Lake Huron, Georgian bay, Lake Erie and connecting channels, has also been issued recently by the same authority.

Take the Nickel Plate road to Boston. Through sleepers from Chicago. 2 Mar 31

Conditions Leading to Exports of Steel.

Lake vessel owners who have seen shipments of iron ore increase within the past ten or twelve years from less than 4,000,000 tons to full 10,000,000 tons, are confident of a similar increase in the development of this industry within another period even shorter than that which has elapsed since the first steel ore carriers of large capacity were built for the ore trade. This opinion is based largely on the increased use of steel at home in the various structural lines to which it is now applied, but more particularly on the prospects of developing a foreign market for the American product. Within the past few months the sales of pig iron and steel products made on foreign account have been sufficient to cause a great deal of speculation as to the future of the export trade. An editorial on this subject in the current issue of the Iron Age is of a conservative and reliable kind. Referring to the changed conditions that are fitting the leading manufacturers of this country for competition in foreign markets, the writer says:

"First of all is the tendency toward equalization of labor cost per unit of product. A great step in this direction was assured when mild steel supplanted puddled iron. This gave opportunities for economies in handling material in large quantities which we have thoroughly availed ourselves of. Today it is a fact that no steel plant can hope long to survive unless it runs at a rate of 1,000 tons per day. No rail mill remains long in the race unless it can turn out that quantity per day. No wire rod mill is efficient unless it comes close to a monthly product of 6,000 tons. The same is true of structural mills, plate mills and other rolling mill plants. Now this tendency is telling in our favor when considering our ability to meet foreign competitors. The reason is that we have at our doors our own market, the greatest in the civilized world. Our consumption is on a scale which permits a number of works of the maximum capacity to keep running in ordinary times. Another very important point which affects our capacity to produce cheaply in the future is the annihilation of distance through a steady lowering of cost of hauling materials. Except in the southern district, the principal cost to our iron makers has been that of assembling materials. Every step in the improvement of rolling stock, in vessel service or in handling bulky freight lessens the disadvantages under which we have been suffering.

"Our resources of ore and of fuel are unequaled anywhere in the world. We can put ore, coal and coke on cars for shipment, of an exceptional quailty, at prices which the European nations can not rival. Our great drawback has been that they have been so far apart. Every year is lessening that disadvantage. The lowering of freights, too, is helping us to reach tidewater markets at lower and lower figures, and with a steady cheapening in the cost of building ocean-going vessels and of abundant capital to run them at low rates of interest, we shall resume our position as carriers on the high seas. Our principal rivals, the English iron makers, are steadily drifting into a more unfavorable position. In the days when it took three and four tons of coal to produce one ton of finished product the location of iron making plants near the fuel was natural, and the ore went to the coal. Now the tendency the world over is toward the ore, because improvements of manufacture have lessened the fuel consumption until the quantity required is little more than one ton of coal converted into coke, per ton of steel, while the ore is a fixed quantity, say over two tons per ton of product. Since England must import the bulk of its ore from sources failing in some important respects, and since even its cost of fuel is steadily rising, its position is growing steadily more unfavorable. Germany has very cheap ore relatively near at hand, but the ore is very poor as compared with our own. The coal is costly, but that is partly compensated for by the success in reducing the cost of coking to a minimum by utilizing the by-products. We believe that the greatest single reduction in the item of cost which lies ahead for our own makers of iron will be in introducing German methods of coking.

"These are the grounds, which in our opinion, justify the conviction that at no very distant date this country will be able to permanently control a share of the world's markets in steel and its products. As a matter of fact, a lowering in costs is in sight which will bring us very near to that point. But for the present it must be admitted that only the abnormal conditions existing on both sides of the Atlantic justify the export movement which has been in progress. These conditions will probably change pretty soon, and then we shall have less of it. But in the meantime we shall steadily develop until we reach the point when we have come into the world's market to stay. The day is not very far off."

A VIEW OF WHALEBACK VESSELS SHORTLY AFTER ARRIVAL AT THE HEAD OF THE LAKES ON THE CLOSE OF NAVIGATION, 1896.

When Going to

Pittsburgh take Pennsylvania No. 10, "The Flyer." Leaves Union station 8 a. m. daily, Euclid avenue 8:10 a. m.; arrives Pittsburgh 11:30 a. m. Solid vestibuled train, Pullman Buffet Parlor car attached to train. Apl 15

The Review has excellent photographs of lake ships.

Appointments of Captains and Engineers.

Miller, J. B., Toronto, Ont.: Steamer—Seguin, Capt. James B. Symes, Engineer Samuel Gillespie.

Roby Transportation Co., Detroit: Steamer—L. C. Waldo, Capt. Jno. Duddleson, Engineer Jno. Collins.

Myles, Thomas Sons, Hamilton, Ont.: Steamer—Myles, Capt. Geo. Mackey, Engineer James Smeeton.

Charlevoix Lumber Co., Charlevoix, Mich.: Steamer—Pine Lake, Capt. Eph. Small, Engineer Jno. Chemock.

Hopkins Steamship Co., St. Clair Mich.: Steamer—Centurion, Capt. David Hutchinson, Engineer Thomas Kelley.

Brown Steamship Co., H. H. Brown, President, Cleveland: Steamer—Castalia, Capt. C. C. Allen, Engineer S. H. Miller.

McCormick & Co., L. H., Menominee, Mich.: Steamer—Simon J. Murphy, Capt. Albert Renders, Engineer W. H. Stone.

Peterson, J. D., Huron, O., Manager for Geo. W. Brown: Steamer—J. C. Lockwood, Capt. J. D. Peterson, Engineer Geo. W. Curtis.

Stewart Transportation Co., A. E. Stewart, Manager, Detroit: Steamer—C. F. Bielman, Capt. Fred Stewart, Engineer Capt. A. F. Hogle.

Beyschlag, Chas., St. Clair, Mich.: Steamer—P. J. Ralph, Capt. H. Leisk, Engineer J. W. Bolton. Schooner—Harold, Capt. Thos. Leisk.

Ohio & Pennsylvania Coal Co., Cleveland: Steamer—Alcona, Capt. W. T. Sutherland. Engineer ———. Schooner—Alta, Capt. Horace Huntoon.

Whitaker Bros., Detroit: Steamer—Byron Whitaker, Capt. A. Ames, Engineer D. W. Blovett. Schooner—S. V. R. Watson, Capt. Chas. Woods.

Ashley & Dustin, Detroit: Steamers—Frank E. Kirby, Capt. A. J. Fox, Engineer E. Perry; Wyandotte, Capt. John Desana, Engineer Julius Holder.

Bennett, Geo. J., Port Huron, Mich.: Steamer—Cleveland, Capt. George J. Bennett, Engineer Charles Flannagan. Schooner—Eureka, Capt. Joseph Adams.

Grummond, U. G., Detroit: Steamers—State of Michigan, Capt. D. C. McCarthy, Engineer D. Gillige; V. Swain, Capt. Geo. Odette, Engineer Daniel Groves

Livingston, W. A., Detroit: Steamers—T. W. Palmer, Capt. Geo. F. Stilphen, Engineer Robt. B. Hodge; Livingston, Capt. W. H. Wilson, Engineer Alex. Morison.

Conlon, J. & T., Thorold, Ont.: Steamer—Erin, Capt. P. Sullivan, Engineer Wm. McMaugh. Schooners—F. L. Danforth, Capt. John Cornwall; Maggie, Capt. John Rosie.

North West Transportation Co., Sarnia, Ont.: Steamers—Monarch, Capt. E. Robertson, Engineer E. W. McKean; United Empire, Capt. John McNab, Engineer S. Brisbin.

West Division Steamship Co., Milwaukee: Steamers—Fred Pabst, Capt. D. Sullivan, Engineer James Bennett; Wm. H. Wolf, Capt. W. Lund, Engineer Thomas Albrighton.

Lake Ontario & Bay of Quinte Steamboat Co., Kingston, Ont.; Steamers—North King, Capt. John Jarrell, Engineer O. J. Hickey; Hero, Capt. Wm. Bloomfield, Engineer Robt. Marshall.

Playfair Barge & Tug Line, Midland, Ont.: Steamers—St. Andrew, Capt. W. H. Featherstonhaugh, Engineer Jno. McRae; Metamora, Capt. R. H. Gilbertson, Enginer, E. A. House.

McLachlan Transportation Co., Port Huron, Mich.: Steamer—Kittie M. Forbes, Capt. J. W. Montgomery, Engineer August Rogers. Schooner—Mary E. McLachlan, Capt. James Green.

Rice, W. E., Port Huron, Mich.: Steamer—Rhoda Stewart, Capt. W. E. Rice, Engineer James Southgate. Schooner—Magnet, Capt. Elmer Campbell; F. M. Knapp, Capt. John Powell.

Ann Arbor Railroad & Steamship Lines, Toledo, O.: Steamers—Ann Arbor No. 1, Capt. Peter Kilty, Engineer A. W. Ackerman; Ann Arbor No. 2, Capt. John Stufflbeam, Engineer G. W. Cosgrove.; J. C. Ford, Capt. W. P. Robertson, Engineer A. P. Williams.

Milwaukee Steamship Co., David Vance & Co., Managers, Milwaukee: Steamers—F. L. Vance, Capt. E. B. Marquette, Engineer Chas. Wilcox; R. P. Flower, Capt. F. W. Van Patton, Engineer Dan'l Darcy.

Pennington, B. L., Cleveland: Steamers—C. B. Lockwood, Capt. R. Jollie, Engineer J. B. Wood; Geo. Spencer, Capt. F B. Powell, Engineer J. H. Haig. Schooner—B. L. Pennington, Capt. E. M. Fuller.

Wisconsin Steamship Co., David Vance & Co., Managers, Milwaukee: Steamers—F. Schlesinger, Capt. D. P. Craine, Engineer A. R. Fortier; G. H. Dyer, Capt. A. E. McGregor, Engineer Geo. R. Robinson.

Sylvester Bros, Toronto, Ont.: Steamers—L. Shickluna, Capt. H. O. Jackson, Engineer W. H. Cunningham; Eurydice, Capt. J. Jackson, Engineer Geo. Munroe. Schooner—St. Louis, Capt. Geo. Williamson.

Alger, Smith & Co., Detroit, Steamers—Volunteer, Capt. W. H. Rolls, Engineer P. B. McCabe; Gettysburg, Capt. S. H. Currie, Engineer W. P. Wenner; Torrent, Capt. Alex. Cattanach, Engineer J. M. Cronenweth.

Morley & Hill, Marine City, Mich.: Steamers—W. B. Morley, Capt. J. A. Nicolson, Engineer Pat Caniff; St. Lawrence, Capt. Al. Senghas, Engineer Tib Durant; J. J. Hill, Capt. John Andrews, Engineer ———.

St. Lawrence & Chicago Steam Navigation Co., John H. G. Hagerty, Manager, Toronto, Ont.: Steamers—Algonquin, Capt. James McMaugh, Engineer James H. Ellis; Rosedale, Capt. James Ewart, Engineer, Richard Childs.

Holland, N., Buffalo: Steamers—C. F. Curtis, Capt. James Cunningham, Engineer ———. Schooners—Isabel Reed, Capt. Peter Johnson; T. S. Fassett, Capt. William P. Johnson; N. C. Holland, Capt. Peter J. Keischgens.

Cleveland & Buffalo Transit Co.: Steamers—City of Buffalo, Capt. John Edwards, Engineer J. Y. Rendall; State of Ohio, Capt. W. H. Smith, Engineer Andrew Melroy; State of New York, Capt. Hugh McAlpin, Engineer Wm. Steen.

Hebard, Charles & Son, Pequaming, Mich: Steamers—Charles Hebard Capt. James Parsons, Engineer Wm. Schumaker. Schooners—Annabell Wilson, Capt. Daniel Nathan; Aloha, Capt. Wm. Elliott; Annie M. Peterson, Capt. Charles Bough.

Milwaukee Tug Boat Line, Milwaukee: Steamers—Helena, Capt. James Leisk, Engineer Scott Pratt; Neosho, Capt. W. E. Wright, Engineer D. W. Chipman Jr.; Veronica, O. J. Soleau, Engineer Wm. Riordan. Schooner—Amboy, Capt. W. R. Williams.

Stevenson, John, Detroit: Steamers—Mascotte, Capt. N. L. Stewart, Engineer Irvin Morrison; John H. Pauly, Capt. Oliver Bushaw, Engineer ———; Sakie Shepherd, Capt. Antoine Papinaw, Engineer John Gilsey; Bessie, Capt. W. J. Jack, Engineer Wm. Craig.

Fletcher, F. W., Alpena, Mich.: Steamers—F. W. Fletcher, Capt. John A. Stewart, Engineer S. A. Merrill; John Owen, Capt. Thomas Lillas, Engineer David Thompson; Frank W., Capt. John Lawson, Engineer Byron Persons. Schooner—India, Capt. H. Hansen.

Eddy-Shaw Co., Bay City, Mich.: Steamers—E. C. Pope, Capt. T. D. Gibson, Engineer Henry Annett; Selwyn Eddy, Capt. J. H. Smith, Engineer S. G. Cowell; Penobscot, Capt. J. H. Coleman, Engineer R. E. Walker; City of Bangor, Capt. Wm. Cavers, Engineer Geo. M. Tilton.

Niagara Navigation Co., John Foy, Manager, Toronto, Ont.: Steamers—Chippewa, Capt. J. McGiffin, Engineer R. McCaul; Corona, Capt. W. H. Tolmes, Engineer Wm. Walsh; Chicora, Capt. J. K. Harbottle, Engineer H. Parker; Ongiara, Capt. H. J. McIntyre, Engineer M. Carl.

Mathew's Line, Toronto, Ont.: Steamers—Niagara, Capt. James Morgan, Engineer John Gray; Clinton, Capt. John Joyce, Engineer P. J. Carr. Schooners—Emerald, Capt. John McGribbon; Clara Youell, Capt. W. J. Colwill; Lisgar, Capt. John Fahey; Grimsby, Capt. Grant Horne.

Republic Iron Co., Cleveland: Steamers—Republic, Capt. J. A. Landfair, Engineer William Lowe; Specular, Capt. Chas. Hinslea, Engineer A. E. Bury; Continental, Capt. Wm. Megarvey, Engineer John Smith. Schooners—Magnetic, Capt. Harry Rogers; G. Holland, Capt. W. A. Black.

Delta Lumber Co., E. L. Thompson, Manager, Detroit: Steamers—Lewis Pahlow, Capt. Benj. T. Ogden, Engineer Wm. F. Taylor; City of Berlin, Capt. John Buie, Engineer Samuel Braund; Ionia, Capt. W. W. Stewart, Engineer Thos. Hubbard. Schooners—Delta, Capt. A. H. Shafer; G. H. Waud, Capt. A. H. Shafer.

North Western Transportation Co, Detroit: Steamers—Harvey H. Brown, Capt. E. C. Gatfield, Engineer John H. Hand; S. R. Kirby, Capt. D. Girardin, Engineer Wm. Watts; Fayette Brown, Capt. J. W. Nicholson, Engineer Nickolas Anderson; E. M. Peck, Capt. C. H. Chamberlain, Engineer Emil Mercier. Schooner—G. E. Hartnell, Capt. Jno. F Jones.

Lake Superior Iron Co., Cleveland: Steamers—La Salle, Capt. Wm. Ames, Engineer Frank Steadley; Joliet, Capt. E. T. Rattray, Engineer F. B. Smith; Wawatam, Capt. Edward Mooney, Engineer Edward Dempsey; Griffin, Capt. O. W. Green, Engineer W. T. Walker; Andaste, Capt. Emil Detlefs, Engineer Wm. H. Kennedy; Choctaw, Capt. Benson Fox, Engineer C. E. Walsh.

Fitzgerald, R. P., & Co., Milwaukee: Steamers—Philip D. Armour, Capt. F. D. Chamberlin, Engineer J. R. Mason; Wiley M. Egan, Capt. Fred Howe, Engineer Fred Coleman; R. P. Fitzgerald, Capt. Leslie E. Boyce, Engineer B. McNeill; John Plankinton, Capt. Lewis H. Powell, Engineer Wm. G. Fell; Denver, Capt. Peter Christenson, Engineer John Smith; Omaha, Capt. Hawley M. Boyce, Engineer C. Benschneider; Pueblo, Capt.

Duncan Stalker, Engineer Aleck. Staley; Topeka, Capt. Albert Gibbs, Engineer A. W. Wilcox.

Lake Michigan & Lake Superior Transportation Co., Chicago: Steamers—Manitou, Capt. Allan McIntyre, Engineer R. L. Peck; City of Duluth, Capt. Donald McLean, Engineer Henry Chalk; City of Traverse, Capt. J. M. Twichell, Engineer Edward Meeh; Peerless, Capt. H. C. Page, Engineer J. R. Bennett; Jay Gould, Capt. Joseph White, Engineer Daniel H. Robertson.

Smith, Edward, Buffalo: Steamers—Thomas Cranage, Capt. John S. McNeil, Engineer E. S. Laframa; City of Venice, Capt. Charles Ainsworth, Engineer D. Pierce; City of Paris, Capt. E. D. Ballentine, Engineer E. Pierce; Samoa, Capt. John Isbister, Engineer Lewis Minnie; Samuel Marshall, Capt. August Jean, Engineer ———. Schooner—Samuel J. Tilden, Capt. John Burke.

Sicken, M., Marine City, Mich.: Steamers—Santa Maria, Capt. David Carrier, Engineer Chas. Burns; M. Sicken, Capt. John Kuhn, Engineer Wm. Sicken. Schooners—Teutonia, Capt. Harry Lawrence; Thos. Gawn, Capt. Julius Lawrence; E. J. McVea, Capt. J. Chaltran; Melvina, Capt. Harry Larsen; C. Spademan, Geo. Gullette; Grace Whitney, Capt. ———; St. Joseph, Capt. ———.

Detroit & Cleveland Steam Navigation, Co., Detroit: Steamers—City of Detroit, Capt. Alex. J. McKay, Engineer Wm. S. Huff; City of Cleveland, Capt. Aichy McLachlan, Engineer John M. Sargent; City of Alpena, Capt. Matthew Lightbody, Engineer A. Phillips; City of Mackinac, Capt. H. J. Slyfield, Engineer Wm. McDonald; City of the Straits, Capt. Duncan McLachlan, Engineer James Middleton.

Union Transit Co., H. C. French, Manager, Buffalo: Steamers—J. V. Moran, Capt. David O. Bordeaux, Engineer Jas. H. Countryman; J. M. Nicol, Capt. Wm. McLean, Engineer Geo. E. Tretheway; W. H. Stevens, Capt. John H. Maloy, Engineer John E. McSweenie; Jas. Fisk, Jr., Capt. Norman McGuire, Engineer Jas. M. Oag; Eber Ward, Capt. Murray G. McIntosh, Engineer John R. Judge; Avon, Capt. John L. McIntosh, Engineer Fred F. Sherwood; Portage, Capt. S. E. Chatterton, Engineer Geo. Haig.

Ogdensburg Transit Co., Ogdensburg, N. Y.: Steamers—J. R. Langdon, Capt. Harvey Brown, Engineer D. G. Costello; Gov. Smith, Capt. W. S. Shay, Engineer J. N. Phillips; A. McVittie, Capt. W. H. Williams, Engineer A. D. Houghton; H. R. James, Capt. James Owens, Engineer Jas. Turnbull; F. H. Prince, Capt. D. A. Kiah, Engineer R. Chestnut; W. J. Averell, Capt. W. D. Wait, Engineer J. Alexander; W. A. Haskell, Capt. E. B. Shay, Engineer M. Gore; W. L. Frost, Capt. J. W. Goodrich, Engineer J. Chestnut.

Whitney, D. Jr., Detroit: Steamers—E. W. Oglebay, Capt. W. H. Hutcheson, Engineer Ed. Egan; Merida, Capt. John Ivers, Engineer James Balfour; Tampa, Capt. John Leonard, Engineer Chas. Murett; Mecosta, Capt. A. C. May, Engineer Owen Williams; Lansing, Capt. Chas. Miner, Engineer, Jos. Coveyeau; D. C. Whitney, Capt. R. H. Sunderland, Engineer, Jos. Lacy; Nipigon. Capt. Ed. July, Engineer, Chas. Francomb. Schooners—Ashland, Capt. Geo. Dennis; Wayne, Capt. A. M. Elliot; Melbourne, Capt. Geo. Cooper.

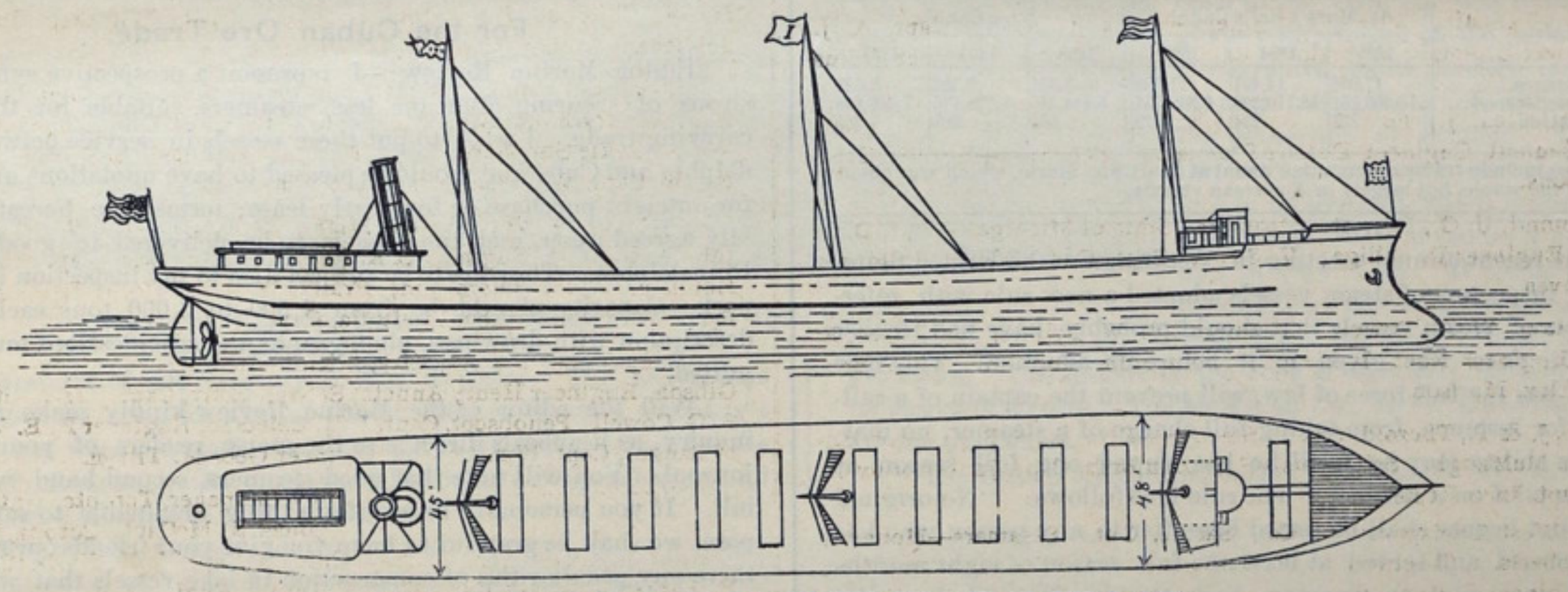
Goodrich Transportation Co., Chicago: Steamers—Virginia, Capt. H. E. Stines, Engineer G. P. Roth; Indiana, Capt. A. Gallagher, Engineer Ray Flint; Iowa, Capt. John Raleigh, Engineer Jules Buschman; Atlanta, Capt. Wm. Nicholson, Engineer W. H. Jerome; City of Racine, Capt. John Wilson, Engineer P. Weber; City of Ludington, Capt. Ed. Carns, Engineer J. Callan; Chicago, Capt. James Munger, Engineer F. Neidert; Sheboygan, Capt. D. Cochrane, Engineer J. Weber; Arctic, Capt. J. Thayer, Engineer F. Dorey.

Leathem & Smith, Towing and Wrecking Co., Sturgeon Bay, Wis. Steamers—Jos. L. Hurd, Capt. John Walker, Engineer Geo. Keester; I. N. Foster, Capt. C. B. Packard, Engineer James Curry; Pewaukee, Capt. Samuel Christerforsen, Engineer Rufus Spaulding; A. J. Wright, Capt. Wm. McCumber, Engineer Mark Holt; John Leathem, Capt Henry Tufto, Engineer Oley Sanders; Geo. Nelson, Capt. Frank Tufto, Engineer Ashley Cofferin; Sydney T. Smith, Capt. Peter Batcheller, Engineer Edward Webber. Schooners—Emerald, Capt. —— Olson; Evaline, Capt. Gilbert Anderson; Wm. Aldrich, Capt. Harry Johnson; L. B. Shepard, Capt. Jacob E. Jacobson.

Jones, C. R., & Co., Cleveland: Steamers—Aragon, Capt. W. E. Chatrau, Engineer Warren Tilton; Argo, Capt. Geo. L. Cottrell, Engineer John Golden; Argonaut, Capt. J. H. Warwick; Engineer Walter Harling; Rhoda Emily, Capt. Geo. McCullagh, Engineer W. Westbrook; Preston, Capt. W. J. Harlon, Engineer M. McNamara; Desmond, Capt. L. F. Hunt, Engineer ———; Nelson Mills, Capt. C. H. Woodford, Engineer B. Hanson; Leland, Capt. C. M. Ennes, Engineer C. F. Jubenville; M. C. Neff. Capt. ———, Engineer ———. Schooners—Chas. Wall, Capt. Aolnzo Porter; John O'Neil, Capt. Geo. P. Leon; Sunshine, Capt. F. H. Hubbard; Hattie, Capt. Robinson; Delos DeWolf, Capt. Harry May.

Ice Breaking Steamer for Lake Service.

Capt. B. B. Inman of Duluth has applied for a patent on an ice-breaking freight steamer for lake service. Illustrations of side elevation and deck plans of the proposed vessel are presented herewith. Capt. Inman has had experience from boyhood in a branch of the lake service that required a knowldge of various methods adopted in breaking ice, and he is of the opinion that this service enables him to pass judgment on the kind of vessel best suited to this work. For about fifteen years he was engaged in the tug business on the Detroit and St. Clair rivers, where he had a great deal of ice to contend with, and he has been at the head of a harbor tug line for twelve years at Duluth, where there is probably more ice than is to be found in any other harbor on the lakes. Referring to the drawings, Capt. Inman says:



TYPE OF VESSEL PROPOSED FOR WINTER SERVICE ON THE LAKES.

"I have submitted plans of this proposed vessel to several people whose judgment is valuable and they all agree that the vessel is well suited to the work for which she is intended. It is understood, of course, that winter navigation is not required for many leading items of freight on the lakes but there are several branches of the business that require vessels for winter service. As you will notice by the drawings, the ram bow goes under the ice and rolls it up on both sides, just as the farmer's plow goes through the earth or as a snow plow operates in high snow. The widest part of the vessel is at the bluff of the bow, where we will say she is, for instance, 48 feet wide. From this point she narrows down gradually to the turn of the stern where we will say she is 45 feet wide. This shape in the vessel does away with friction on her sides. As she will not be more than 75 feet from the turn of her forefoot to the bluff of her bow, which is the widest part, it will be seen that the ice within this length will be all that will have to be displaced. As she is not intended to work up into the ice there will be no friction under her and no ice to pass to her wheel and bother her power. In three feet of ice there will be less than fifty tons to displace with this type of vessel, and this would be an easy matter in view of the style of bow that has been adopted. In my opinion the present custom of taking vessels out of commission in practically all lines of lake commerce during four to five months of the year will soon be a thing of the past. There are some kinds of freight that can be carried in sufficient quantities during the open season, but these are limited, and the ability of vessel men to provide vessels for winter navigation in the numerous lines of traffic that require a full year's service will soon be demonstrated."

MARINE REVIEW

DEVOTED TO LAKE MARINE AND KINDRED INTERESTS.

Published every Thursday at No. 409 Perry-Payne building, Cleveland, Ohio, by John M. Mulrooney and F. M. Barton.

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The books of the United States treasury department on June 30, 1896, contained the names of 3,333 vessels, of 1,324,067.58 gross tons register in the lake trade. The number of steam vessels of 1,000 gross tons, and over that amount, on the lakes on June 30, 1896, was 383 and their aggregate gross tonnage 711,034.28; the number of vessels of this class owned in all other parts of the country on the same date was 315 and their tonnage 685,204.55, so that more than half of the best steamships in all the United States are owned on the lakes. The classification of the entire lake fleet on June 30, 1896, was as follows:

	Number.	Gross Tonnage.
Steam vessels	1,792	924,630.51
Sailing vessels and barges	1,125	354,327.60
Canal boats	416	45,109.47
Total	3,333	1,324,067.58

The gross registered tonnage of the vessels built on the lakes during the past six years, according to the reports of the United States commissioner of navigation, is as follows:

Year ending June 30. 1891	204	111,856 45
" " " 1892	169	45,968.98
" " " 1893	175	99,271.24
" " " 1894	106	41,984.61
" " " 1895	93	36,352.70
" " " 1896	117	108,782.38
Total	864	444,216.36

ST. MARY'S FALLS AND SUEZ CANAL TRAFFIC. (*From Official Reports of Canal Officers.*)

	St. Mary's Falls Canal.			Suez Canal.		
	1895*	1894	1893	1895	1894	1893
No. vessel passages	17,956	14,491	11,008	3,434	3,352	3,341
Tonnage, net registered	16,806,781	13,110,366	9,849,754	8,448,383	8,039,175	7,659,068
Days of navigation	231	234	219	365	365	365

* 1895 figures include traffic of Canadian canal at Sault Ste. Marie, which was about ½ per cent. of the whole, but largely in American vessels.

At their recent annual meeting in Washington the United States supervising inspectors of steam vessels adopted a new rule with reference to pilots of steam vessels that should probably have had further consideration than was given to it before its adoption. This new rule, which has the full force of law, will prevent the captain of a sailing vessel, for instance, from taking full charge of a steamer, no matter what his ability may be, until he has served one full season as second-class pilot on a steamer. The rule is as follows: "No original first-class pilot license shall be issued hereafter to any person who has not been licensed and served at least one full season of eight months as a second-class pilot on steamers, such service as second-class pilot to have been within two years preceding the application for such license." In order to take charge of a steamer a vessel master must, of course, have first-class pilot's papers. With this rule in force the master of a sailing vessel, who may work for years to obtain an interest in a small steamboat, is barred from taking full charge of the steamboat, until he has served for a season as second-class pilot on a steam vessel. He may know every land mark in every course to be sailed on the lakes, and it is natural to suppose that his experience in a sailing vessel would give him just such information, but the government steps in and says that no matter what his qualifications may be, he must first serve during a full season as second-class pilot. The inspectors may have given this matter a thorough investigation, and it may be also that they have special reasons for adopting this rule, but it is strange that it was put through without more attention being directed to it. The rule is of importance to vessel owners on the lakes, but it can not be learned that the Lake Carriers' Association was informed in any way of the intentions of the board in the matter.

If the United States is to undertake a system of subsidies or other means of assistance with a view to building up the mercantile marine it would seem that the proposed reorganization of the consular service must necessarily go hand in hand with any legislation of this kind. Without a reform in the consular service there is little hope of any great revival in shipping. The last congress made some progress with a bill providing for a reorganization of the service, and the question will undoubtedly be given full consideration by the new administration. Shipping interests of the lakes should have special pride in this movement, as it was first brought up in the National Association of Manufacturers by the Cleveland Chamber of Commerce. The manufacturers demand a reform that will bring about a system of appointments and promotions based solely upon merit; tenure of office during continued good conduct and competency, and compensation sufficient to induce competent men to enter and remain in the service.

It is the opinion of leading marine engineers in the east that the Herreshoffs of Bristol, R. I., have turned out a very fast vessel in the new torpedo boat Farragut. Some of them declare that she will prove herself equal to the best vessels turned out by Normand, the famous French builder of boats of this kind. The Farragut is said to have attained a speed of 34⅜ miles an hour on a short spurt during a run on the Potomac recently from Washington to Mt. Vernon. A number of senators and congressmen were aboard.

Has it occurred to vessel owner that Gen. Alger as scretary of war will be in a position of great influence in event of another Detroit river bridge bill coming before congress? He has been in the past an urgent advocate of a bridge at Detroit. He was also a very enthusiastic supporter of the proposition to erect a memorial of some kind at Sault Ste. Marie in honor of the late Gen. E. M. Poe, and as secretary of war his influence in this matter would be equally important.

Capt. Mahan, America's distinguished naval officer, declares that our double sea coast makes us today "as much as England an insular nation." With Canada and Mexico our neighbors, both far weaker, and our enormous arms-bearing population, "we have nothing to fear on land. Whatever danger threatens us will come from the sea."

For the Cuban Ore Trade.

Editor Marine Review:—I represent a prospective syndicate desirous of securing four (or less) steamers, suitable for the iron ore carrying trade. I wish to put these vessels in service between Philadelphia and Cuba and would be pleased to have quotations on steamers for outright purchase or for yearly lease; terms to be hereafter mutually agreed upon, and the vessels to be delivered in good order at Philadelphia. They are to be subject also to my inspection at any lake port. Capacity should be from 1,500 to 3,000 tons each. A full description with drawings, photographs and specifications must be submitted.

Will the editor of the Marine Review kindly make note of this inquiry, as it appeals directly to the many readers of your valuable journal. You will note that good steamers, second hand, will fill the bill. If you personally know of anything obtainable to suit our purpose, we shall be grateful to have you give your friends our name. Are there any peculiarities of construction in lake vessels that would unfit them for a trip by sea to the West Indies?

509 Drexel Bldg., Joseph Allison Steinmetz.
Philadelphia, Pa., March 8, 1897.

Vessels of the size referred to would, of course, have to be cut in two in order to pass through the St. Lawrence canals. It would probably be necessary also to make some alterations in almost any of the lake vessels so as to fit them for ocean service.—Editor.

Great Lakes-Seaboard Canal Surveys.

Although government officials had nothing to do with the Deep Waterways Commission from which a report was recently submitted to congress through the president, they will be in control of the new commission that is to expend $150,000 on further surveys and investigations, if the sundry civil appropriation bill, which failed to receive the approval of the president in the last congress, is passed without important changes at the extra session of the new congress. The clause in the bill providing for continuance of this work is in full as follows: "For surveys and examinations (including estimate of cost) of deep waterways and the routes thereof, between the great lakes and Atlantic tide waters, as recommended by the report of the Deep Waterways Commission, transmitted by the president to congress Jan. 18, 1897, the sum of $150,000. Such examinations and surveys shall be made by a board of three engineers, to be designated by the president, one of whom may be detailed from the engineer corps of the army, one from the coast and geodetic survey, and one shall be appointed from civil life." It is unfortunate also that no attention was paid to the suggestion of the Lake Carriers' Association that a part of this appropriation be applied to examinations and surveys relating to the project of raising the level of Lake Erie and the lower Detroit river by means of a dam in Niagara river.

West Superior Coal Docks.

A FEW POINTS OF INTEREST TO VESSEL MASTERS TRADING TO THE HEAD OF THE LAKES.

In publishing the illustrations that appear on this page the Review has a double object in view—first to make known to vessel masters on the lakes a request that is made of them by the management of the St. Paul & Western Coal Co., and then to direct attention to the operations of this company at West Superior. The engravings do not show the exact location of the St. Paul & Western company's dock, as they were not made with that end in view, but rather for the purpose of illustrating the company's facilities for transferring and storing hard and soft coal. All vessel captains trading to Lake Superior are acquainted with the location of the dock, however, as it is one of the principal plants and was formerly known as the Connor's point dock. The management has experienced a great deal of inconvenience on account of vessel masters having fallen into the custom of invariably entering the Duluth-Superior harbor through the canal, or Duluth entrance, when it would be greatly to their advantage, if bound for this dock, to pass through the old channel, which is known also as the Superior entry. The conditions prompting this statement are best explained in a letter from Mr. C. S. Morgan, vice-president and manager of the St. Paul & Western company, who says:

ST. PAUL & WESTERN DOCKS, WEST SUPERIOR—VIEW FROM WATER SIDE.

"We have 17 feet of water the length of our dock and it is situated on the channel of the river. If vessels bound for the St. Paul & Western dock would come in through the old channel, known as the Superior entry, they could come to the dock head on, without the expense of a tug and without any effort. This would leave them, when unloaded, headed for the channel leading to all the Duluth and Superior elevators and the ore docks, and save turning around. This would as well save us from a great deal of wear and tear and damage by vessels using our dock as a snubbing post. I have given positive instructions that this must not be done next year, and vessels coming through the canal will have to be turned around before tying up."

This refers, of course, to vessels loaded with anthracite coal as well as those delivering bituminous coal. Mr. W. A. Canfield, who represents the St. Paul & Western company in Cleveland, has endeavored to make this matter plain to vessel captains in the past and will try to direct special attention to it during the coming season, but a general notice is made in the Review for the purpose of still further endeavoring to guard against a misunderstanding. It is suggested that this request is not at all unreasonable, in view of the dispatch that has been given to vessels at this dock, and the disposition of the management at all times to transfer vessels to other docks or to make such changes as would tend to reduce delays when cargoes were bunched. The capacity with six derricks on bituminous coal in ten hours is 2,425 tons and on anthracite 3,560 tons. This is figured on the average unloading during 1896, but is qualified, of course, with the provision that all conditions must be favorable to the best work.

ST. PAUL & WESTERN DOCKS—ANTHRACITE STORAGE AND SCREEN HOUSES.

Publications.

The story "On Many Seas," which has received flattering notices in marine publications throughout the country, is certainly open to the criticism that it leaves a more gloomy impression of the sailor's life than is warranted under modern laws and government regulations of various kinds for the protection of seamen. The name of the author, Frederick Burton Williams, is said to be assumed, and it is understood that after fifteen years at sea he is now an engineer in New York. It seems strange that in his experience at sea he should have met with none but quarrelsome and profane associates. This feature of the book is especially striking in view of its merits otherwise. The McMillan Co., 66 Fifth avenue, New York, are the publishers.

"The British Mercantile Marine," another of the small books in the nautical series issued by Charles Griffin & Co. of London, has been received from the J. B. Lippincott Co. of Philadelphia. It is a short historical review of the British mercantile marine, suited to assisting young sailors.

Admiralty Items.

The case of the Ogdensburg and Lake Champlain Railroad Co. against Aaron A. Parker and others, owners of the propeller B. W. Blanchard, growing out of an alleged breach of charter party for the Blanchard, made in 1886, for the season of 1887–88, was decided by the United States circuit court of appeals for the second circuit, last week, on a question of practice, leaving the case just where it was in 1890. The plaintiff claimed that the Blanchard was not thoroughly fitted out and seaworthy as stipulated for in the charter, and that by reason thereof a crown sheet of the boiler came down, so damaging the vessel that an expenditure of something like $10,000 was made necessary, and a loss of time necessitated in making repairs, causing a further damage of some $2,200. The case was brought in the supreme court of the state of New York, and removed by the defendants to the United States circuit court for the northern district of New York. Jury trial was waived and the case tried to a referee, who seemed to have delayed in making his finding for some four years, the defendants in the meantime serving notice of their election to terminate the reference according to the practice of the state of New York. This notice was not recognized by the referee, who filed a report assessing damages against the defendants to the amount of about $14,000, and judgment was entered thereon against the defendants. The circuit court of appeals held that defendants' notice to terminate was proper, and that all subsequent proceedings were a nullity. This leaves the case as though it had never been tried.

Commencing Tuesday morning at Utica, Judge Coxe of the northern district of New York entered upon the hearing of a case growing out of the collision between the Maurice B. Grover and the Moran, while the latter was aground at the Encampment, May 7, 1896. It is a case of collision with a vessel aground, but there are some facts involved which promise to make the opinion interesting.

Pumps on War Vessels.

The Henry R. Worthington company, manufacturers of steam and electric pumping machinery, have recently received a contract from the Newport News Ship Building & Dry Dock Co. amounting to $100,000 and covering pumps for the United States battleships Kearsarge, Kentucky and Illinois. They are also building the pumps and pumping machinery for the United States battleship Alabama, now being constructed by the Wm. Cramp & Sons Ship and Engine Building Co. The contract for the pumps for this vessel amounts the $33,000. The Worthington company have just completed and delivered the hydraulic machinery for operating the turrets on the United States battleship Iowa. They have recently received a contract amounting to $15,000, covering the pumps required for the armored cruiser that is being built by the Wm. Cramp & Sons Ship & Engine Building Co., for the Japanese government. The Yoshi-No, another Japanese cruiser, is already fitted out with a full complement of Worthington pumps. The fact that with few exceptions all British and other foreign war vessels are equipped with these machines simply adds another testimonial to the high efficiency of the Worthington duplex steam pump.

Barry Bros., tug owners of Chicago, now announce positively that they will have a fleet of tugs at Duluth, to be known, alike to the Chicago fleet, as the Independent Tug Line, ready for operations on the opening of navigation. They say they will give service by the most powerful tugs at the head of the lakes at the lowest rates offered at any time during the season.

A naval program just prepared by the secretary of the German navy provides for the construction, within the coming three years, of ten cruisers, five dispatch vessels, two gunboats, five iron clads, two monitors, two floating batteries and twenty torpedo boats.

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Solid through sleeping car trains with dining cars attached are operated by the Nickel Plate road between Chicago, Cleveland, Buffalo and New York City. Through sleeping car to Boston. 3 Mar 31

Around the Lakes.

James A. Davidson bought the old steamer Sanilac at marshal sale in West Bay City, Monday, for $1,500.

Mr. C. E. Gilchrist, who was last season a member of the firm of Bartow & Gilchrist, will continue in the vessel brokerage business at No. 609 Perry-Payne building, Cleveland.

Capt. Bernard Nelson will command the steamer Robert Fulton of the Bessemer fleet and Capt. Henry Stone the steamer John Ericsson of the same fleet during the coming season.

T. N. Booth of Ashtabula has purchased the schooners Franz Sigel and Columbian from C. E. Chilson of Lorain, and will operate them in the Kelley island stone trade during the coming season.

W. S. Van Keuren, grand captain of the American Association of Masters and Pilots, will be in Cleveland, Saturday, and a special meeting of harbor No. 42 has been called for Saturday evening at 94 Superior street, to welcome him.

The Grummond opposition to the Detroit & Cleveland Steam Navigation Co. has forced passenger boats between the two cities into commission much earlier than usual this season. The Grummond steamer State of Michigan arrived in Cleveland on Wednesday, the 10th, and arrangements were made immediately for one of the D. & C. company's side-wheelers to go into service.

W. A. Lloyd, who has been engaged for a number of years past in constructing and repairing marine engines in the principal Cleveland shops, will have charged of the Ashtabula shop formerly owned by the Harbor Mnfg. Co, and which is to be again in operation before the opening of navigation. The shop is well equipped for all kinds of marine work. Mr. Lloyd recently gave a very instructive talk on propeller wheels to the Cleveland lodge of the M. E. B. A., of which he is a member.

At Duluth, Monday, the principal creditors of Capt. B. B. Inman bought ten of the Inman tugs and will immdieately organize a company, to be known as the Inman Tug Co. and of which Capt. Inman will be manager. Three of the tugs—Carrington, Lyon and Record—were purchased from mortgagees, and it is said that $18,000 was paid for them. Seven others were purchased at marshal sale for $12,775. These were the J. L. Williams, A. C. Adams, Pathfinder, Bob Anderson, Effie L., Fiske and Henrietta. As noted elsewhere, Barry Bros. of Chicago make positive announcement of their intention to have a line of tugs at Duluth next season, and there will therefore be three lines competing for business—Barry Bros., Inman and Singer.

"The foreign field has proved so profitable, even in the old European countries, that we anticipate our export business will soon surpass the home trade." This is an extract from a letter received recently from the Buffalo Forge Co. of Buffalo, N. Y. This company manufactures ventilating apparatus, hot blast machinery, fans and blowers of all kinds, blowing engines, etc. The letter refers especially to blacksmith tools, and there is enclosed a catalogue printed in Spanish, showing the thorough methods adopted for the export trade. The circular is also issued in other languages in sufficient quantities, it is said, to reach every blacksmith shop in the world. The present Spanish edition is intended for Mexico. Others are being prepared for South America, and other Spanish speaking countries. Australia, England and other places where the English money system is used are being reached with the American edition revised to suit the English money system.

A Very Desirable

train to take when going to New York is Pennsylvania No. 6, leaving Union station 1:40 p. m. daily and from Euclid avenue 1:50 reaching New York 7:40 next morning. Pullman sleeper through without change. Supper served in dining car. Apl 15

Solid through trains with sleepers between Chicago, Buffalo and New York City, are run daily via Nickel Plate road. Dining cars attached. 1 Mar 31

U. S. ENGINEER OFFICE, 1101 D. S. Morgan Building, Buffalo, N. Y., February 15, 1897. Sealed proposals for harbor excavation and construction of timber and concrete breakwater at Dunkirk Harbor, N.Y., under continuous contract, will be received here until 11 o'clock A. M., Monday, March 22, 1897, and then opened. Information furnished on application. T. W. SYMONS, Major, Engrs. Mar. 11

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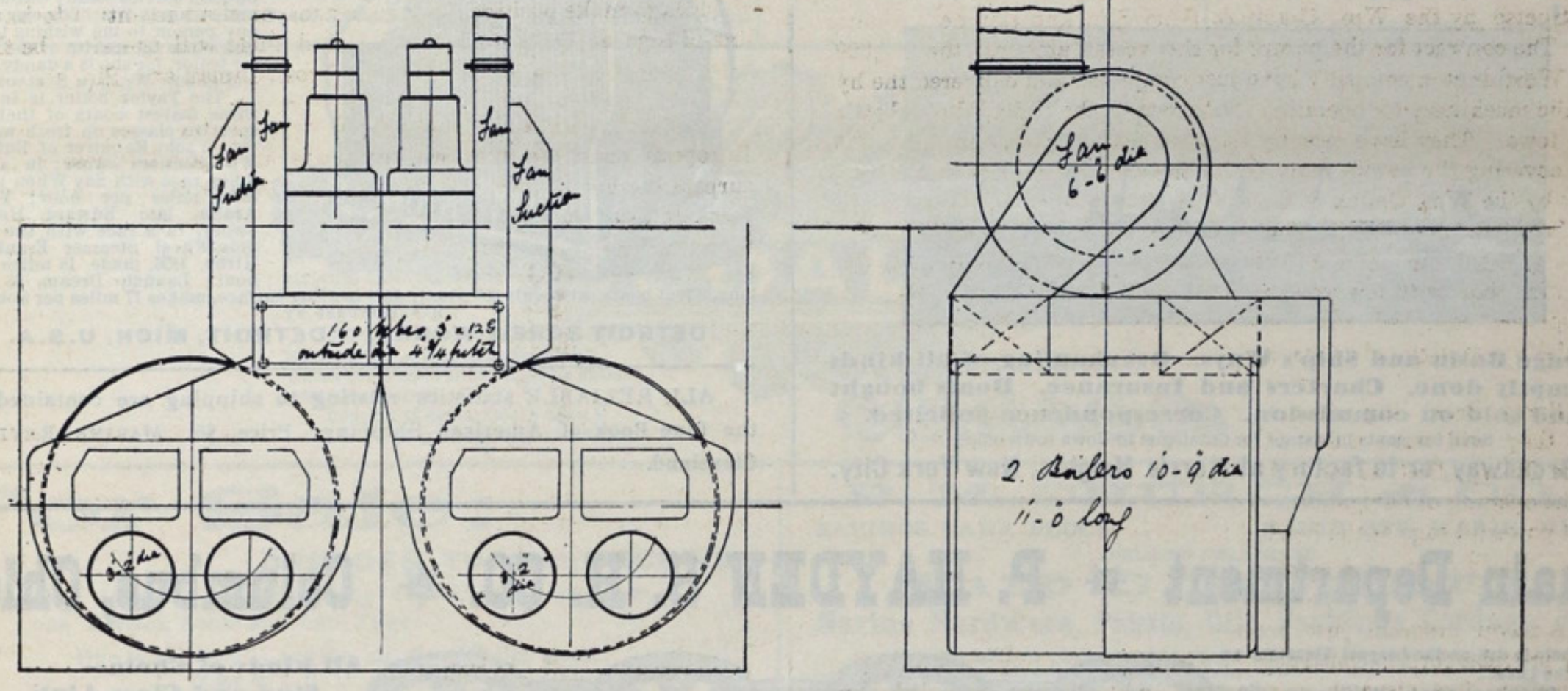

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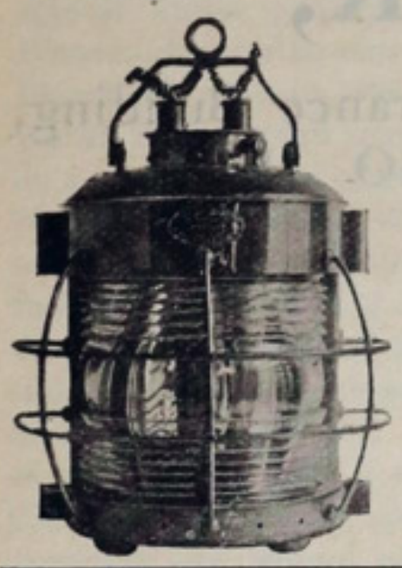

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JOHN H. ATWOOD, Assistant Secretary.

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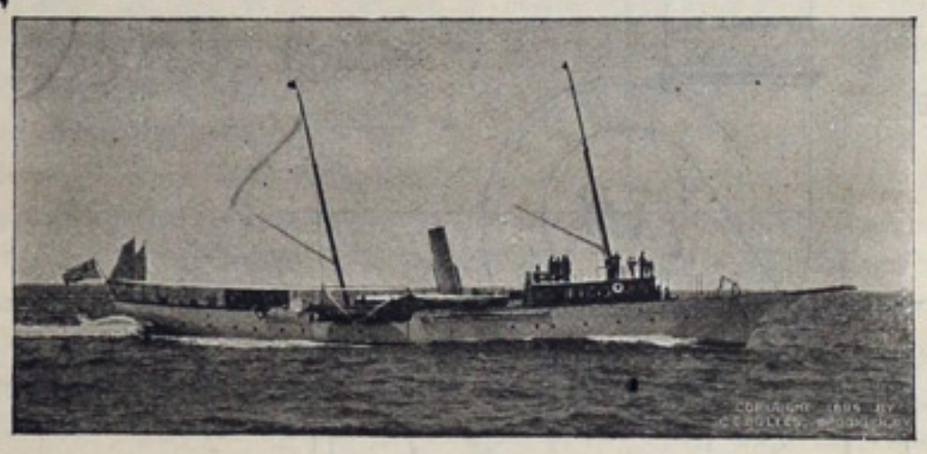

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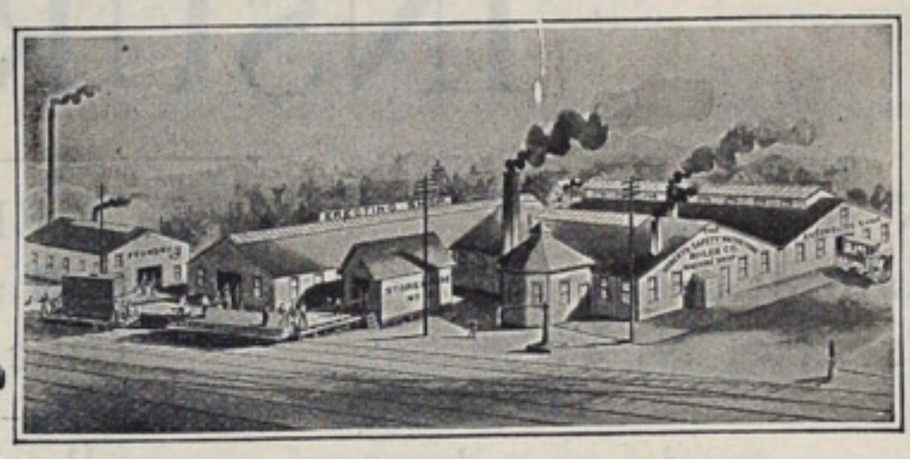

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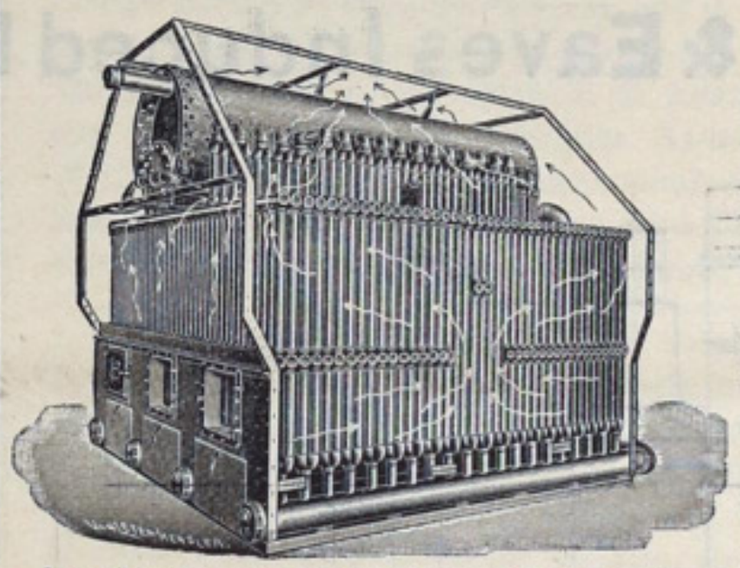

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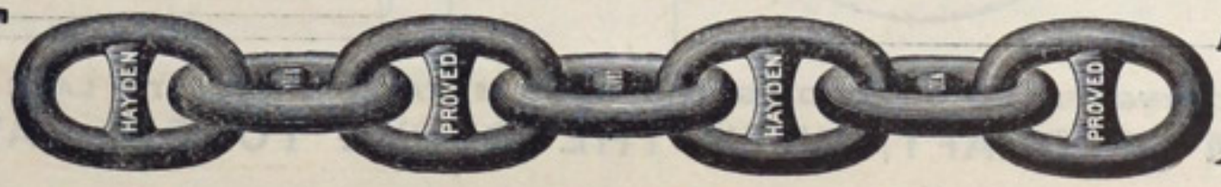

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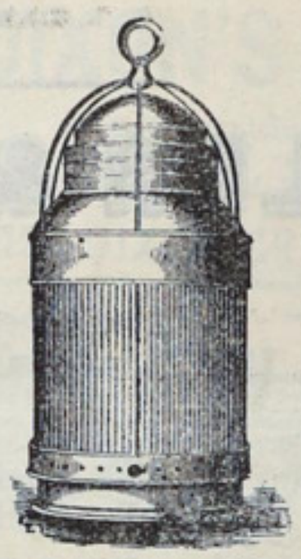

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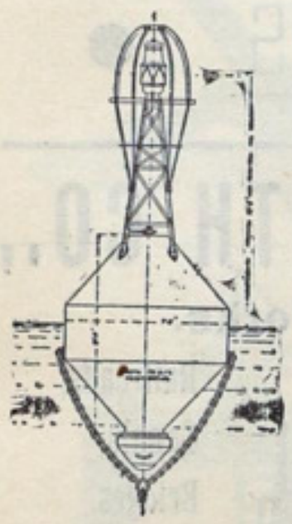

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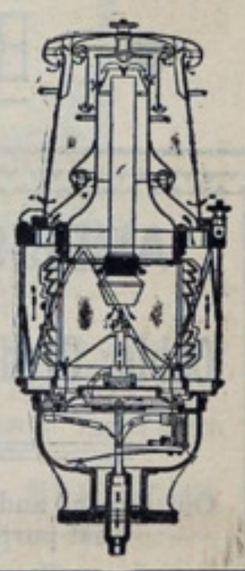

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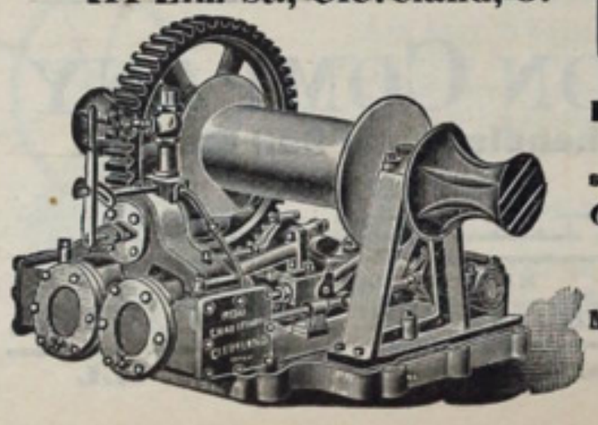

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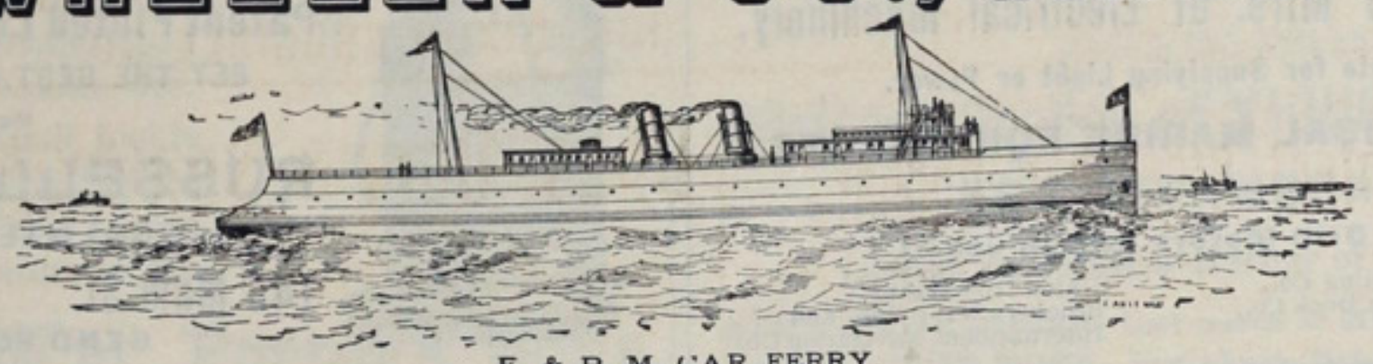

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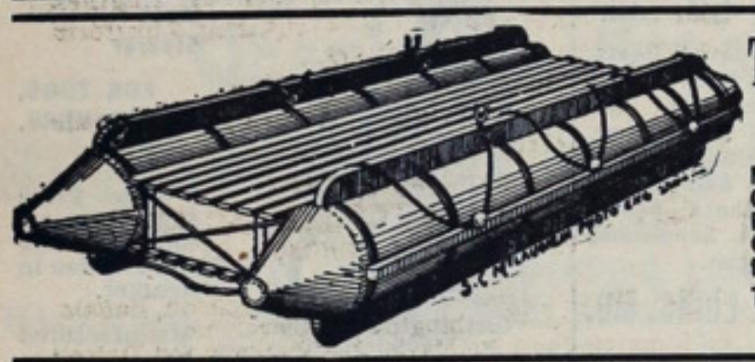

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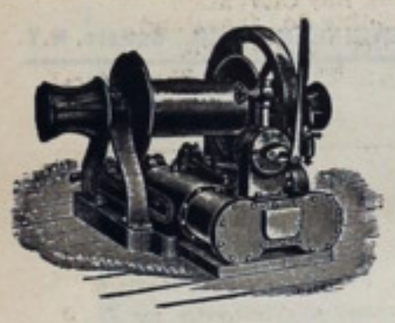

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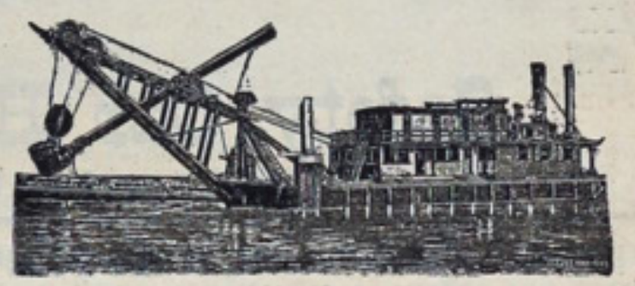

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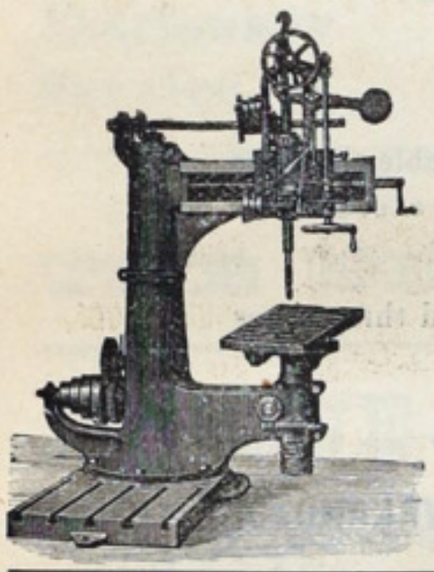

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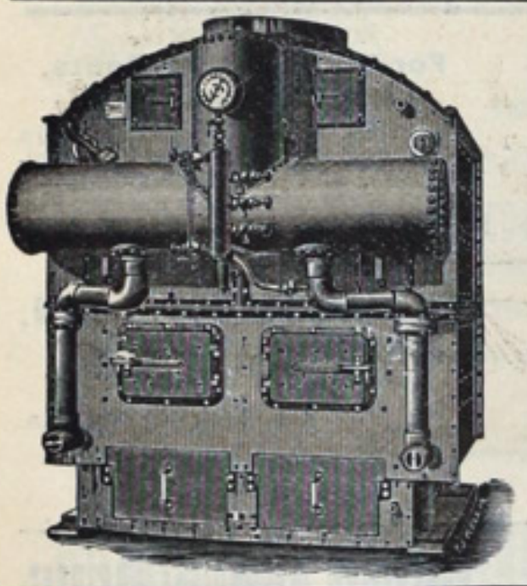

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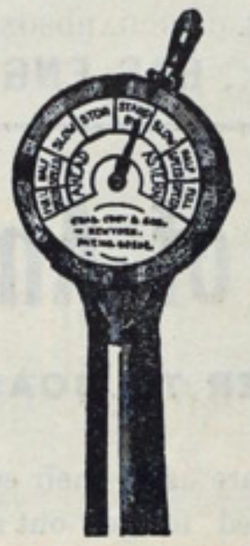

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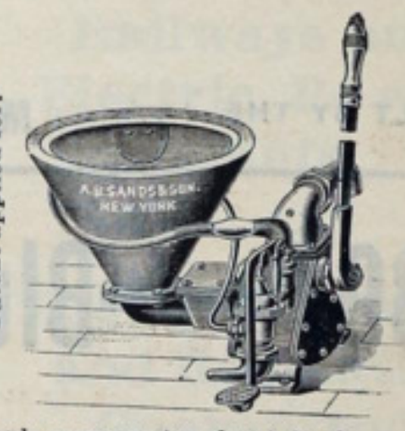

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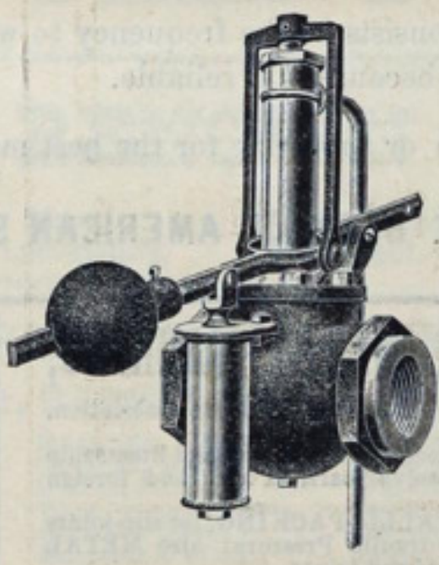

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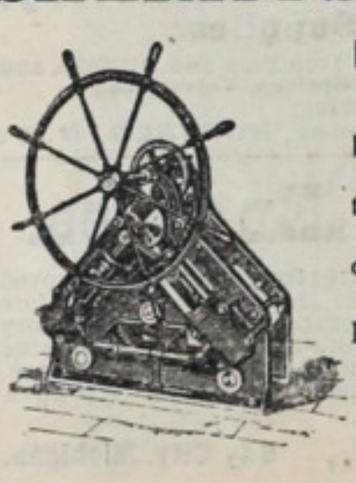

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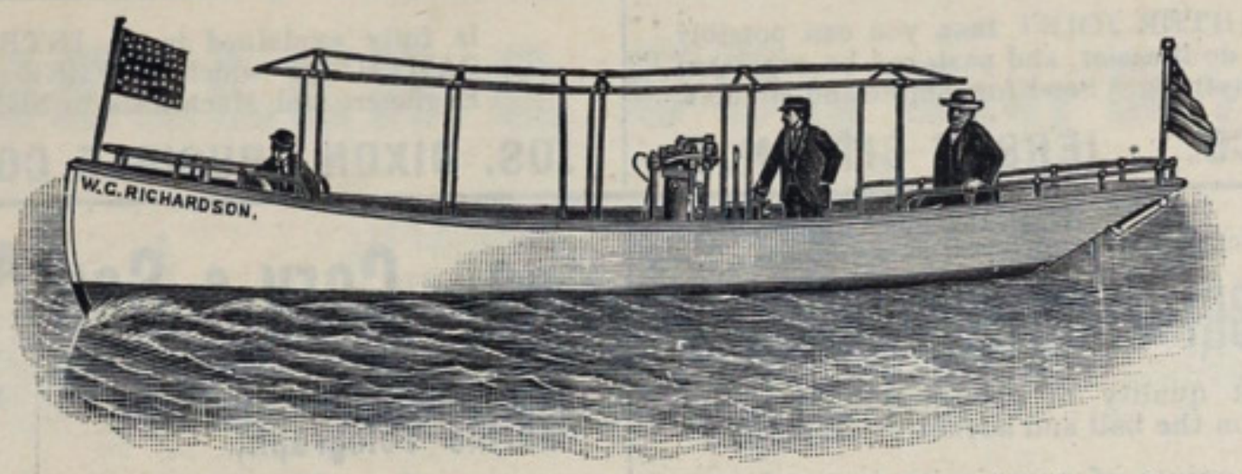

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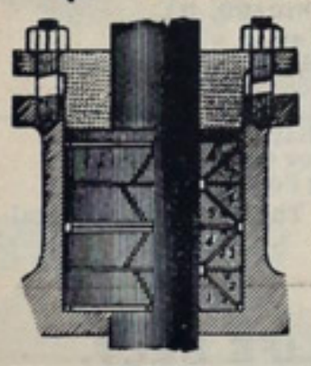

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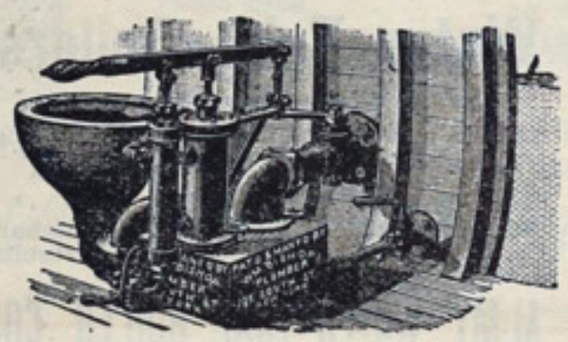

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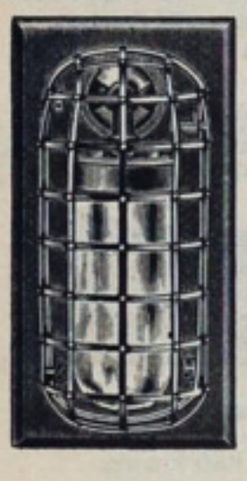

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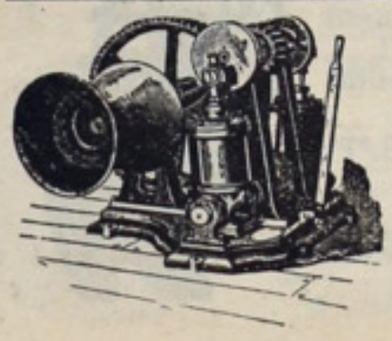

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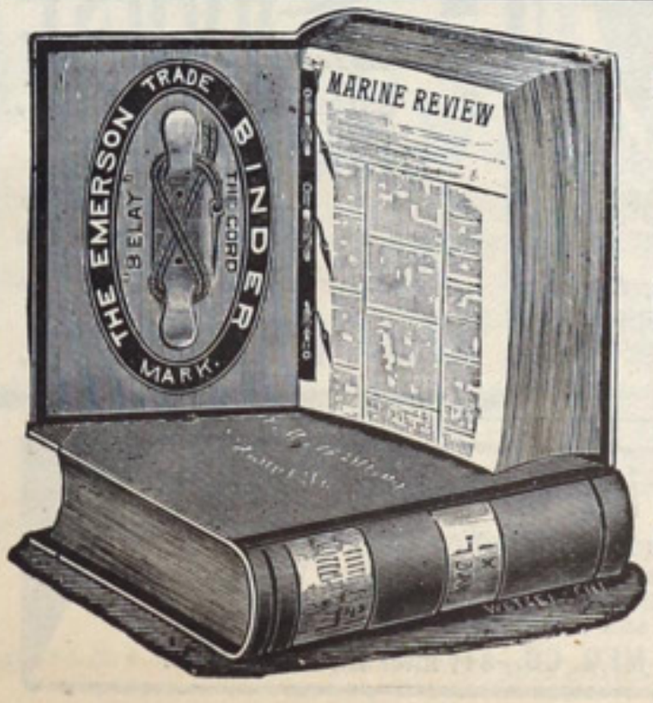

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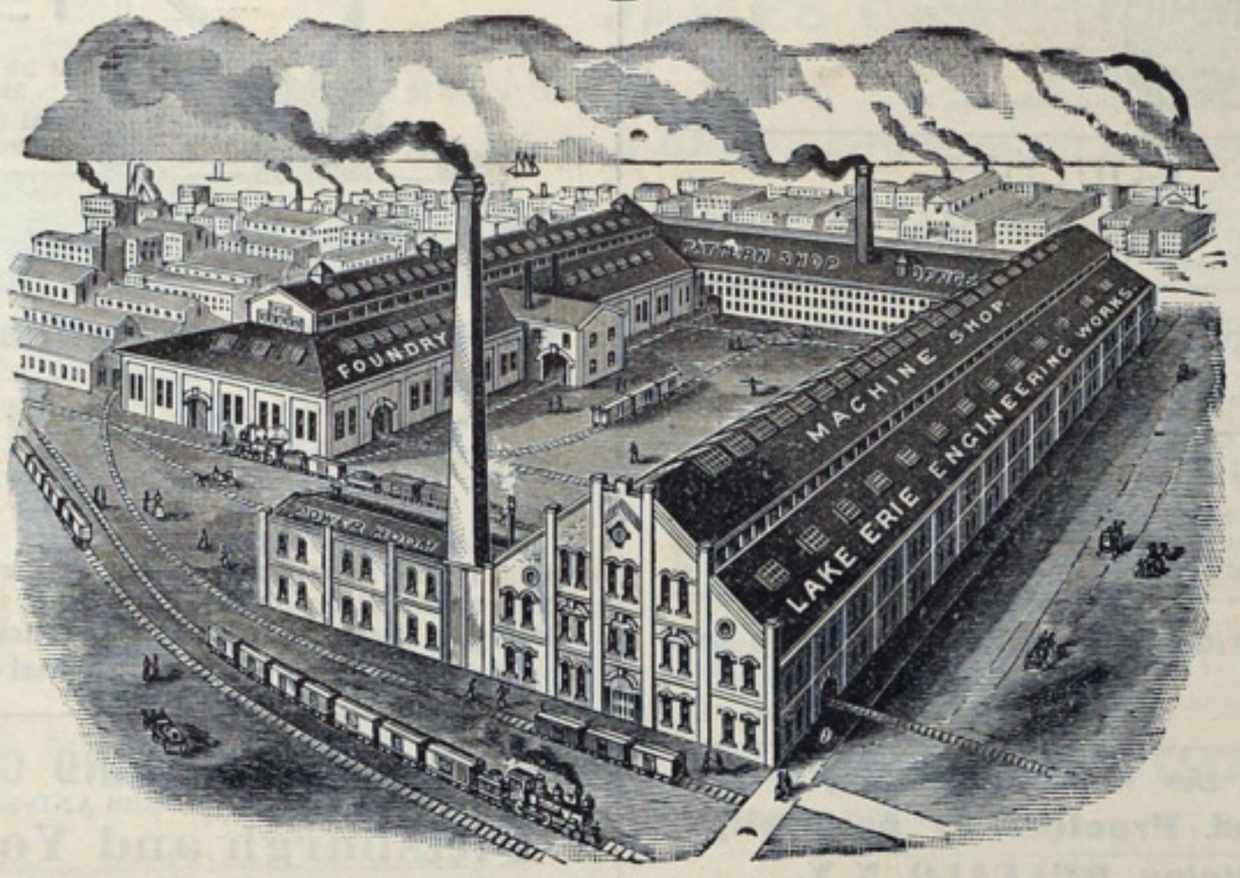

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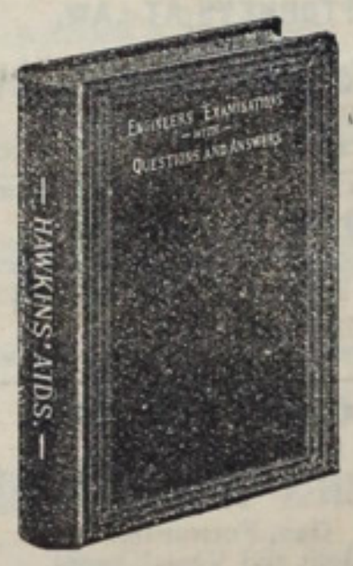

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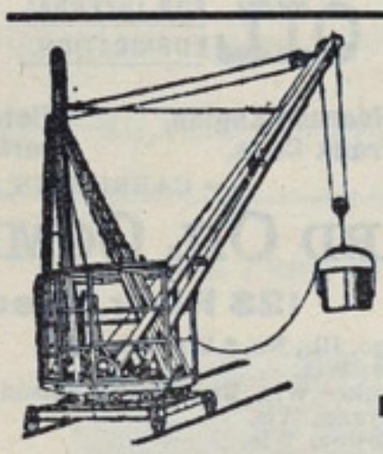
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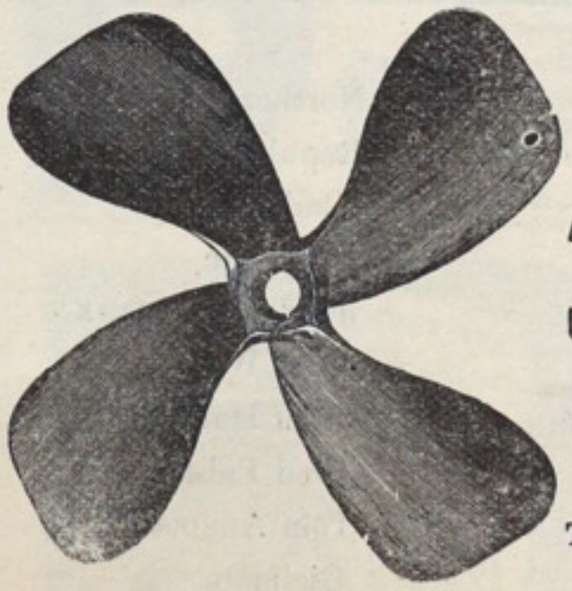
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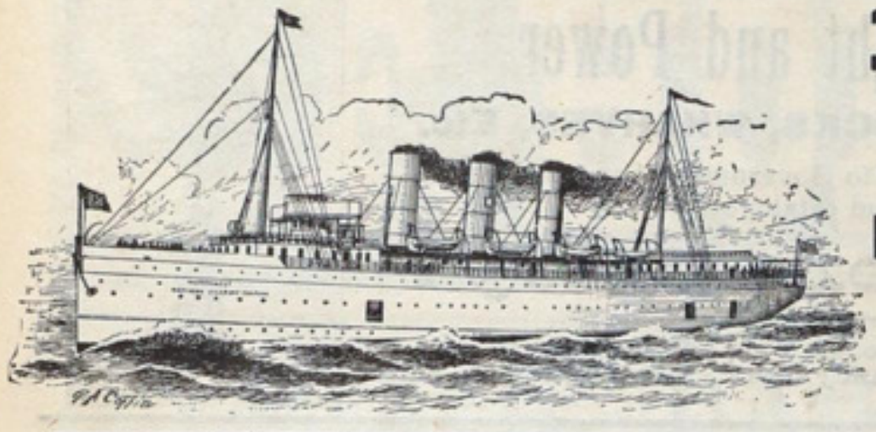

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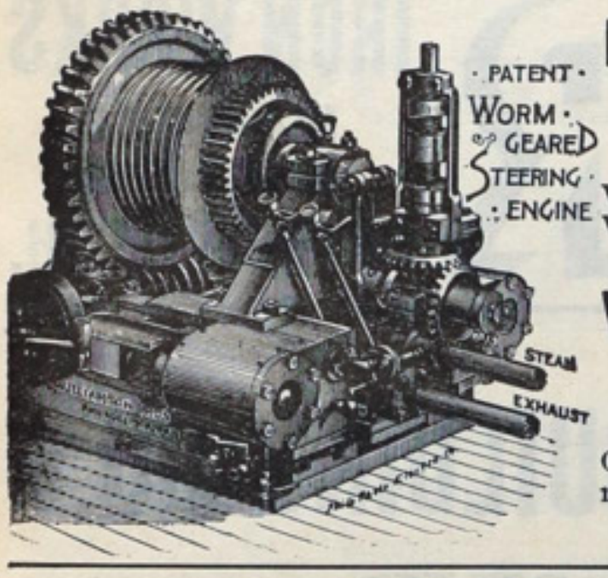

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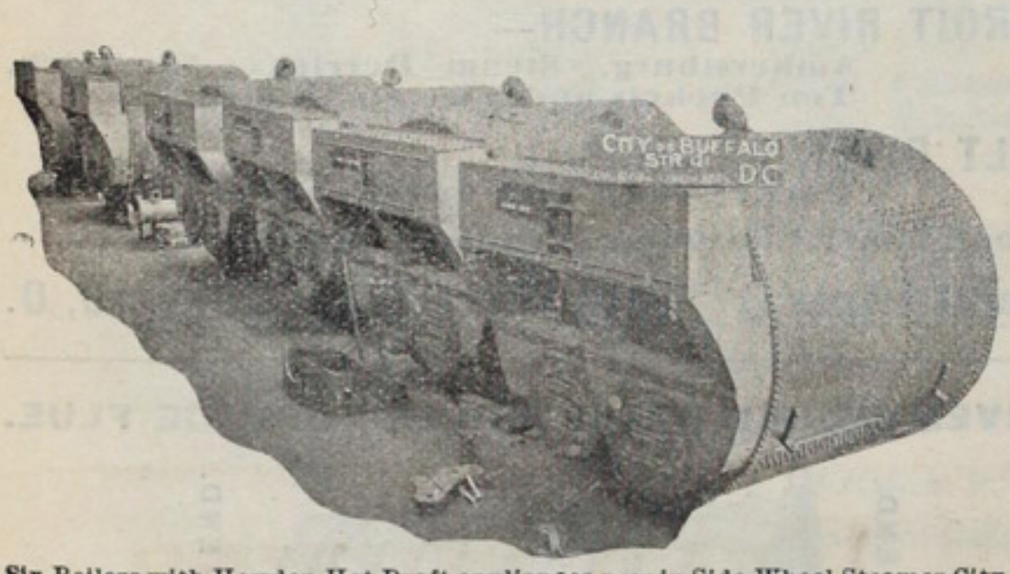

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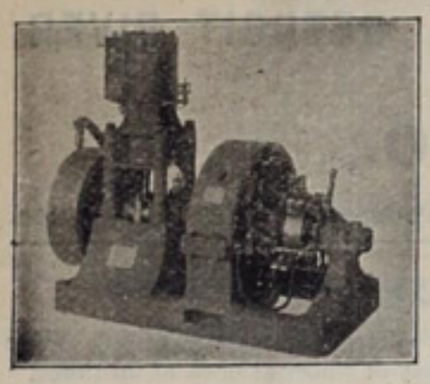

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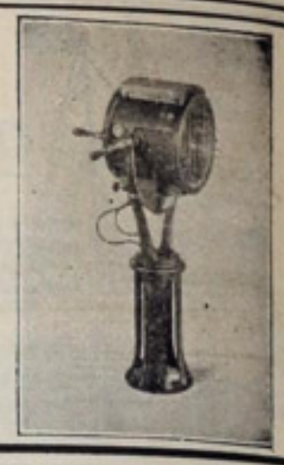

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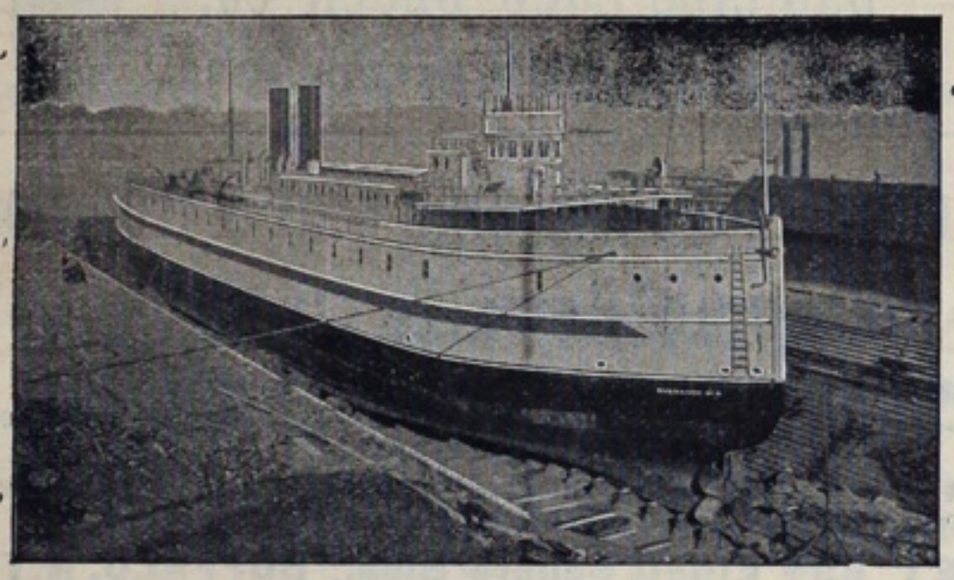

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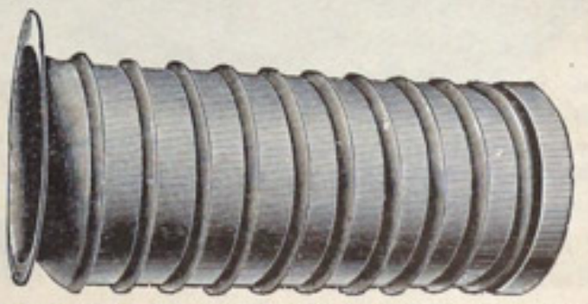

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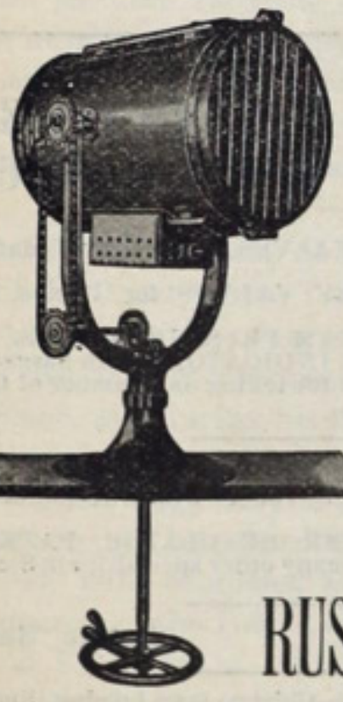

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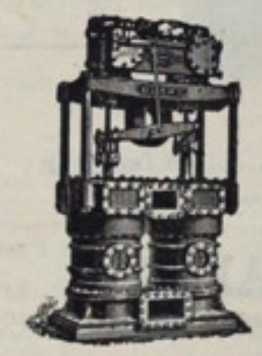

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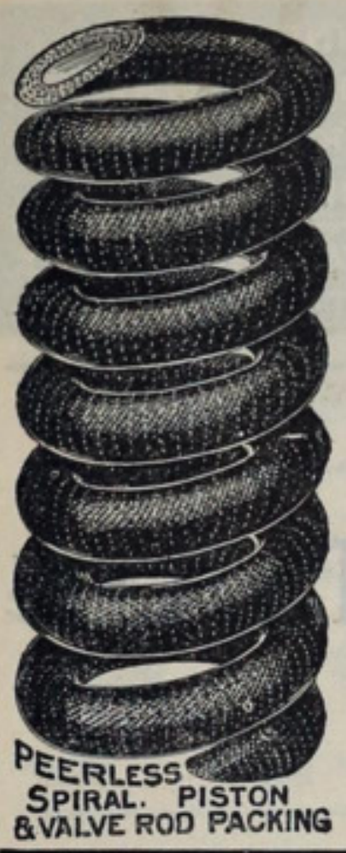
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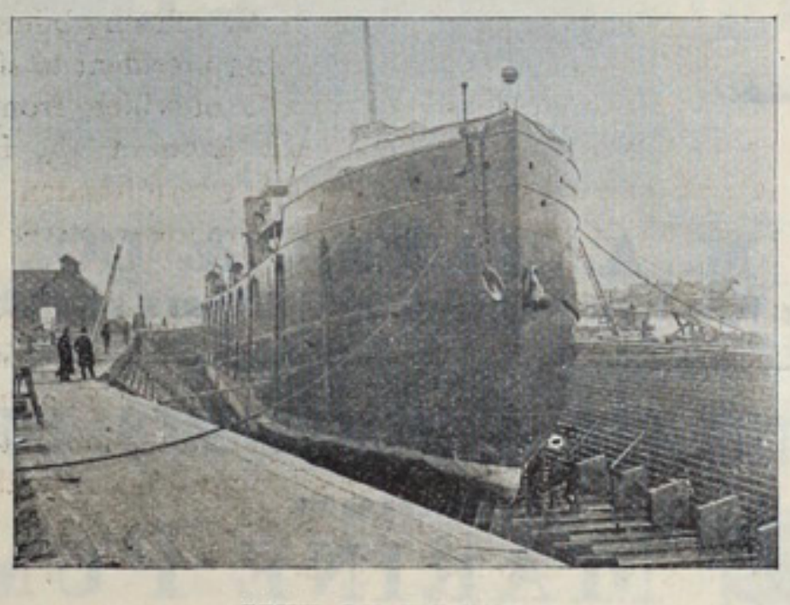

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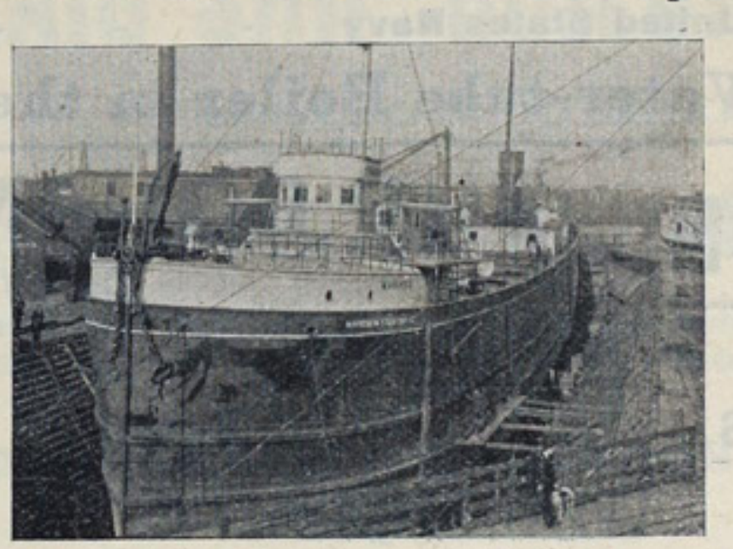

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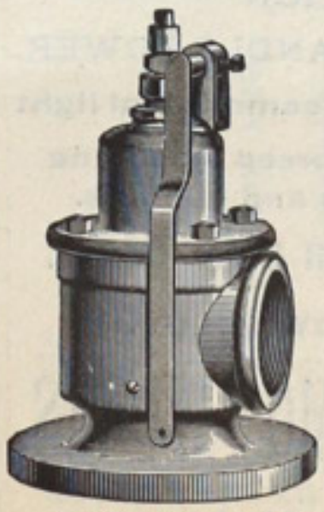

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